The unnatural history of coronary artery disease

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The complete clinical course of any disease—the natural history—is seldom understood. Some conditions are difficult to detect in their early stages; morbidity and mortality may span a period of time longer than the professional career of the investigator and the disease may be altered for better or worse by well intentioned therapeutic measures. These difficulties are encountered in the study of coronary artery disease. Although all obstacles cannot be surmounted, it is necessary to try.

Until the advent of selective coronary arteriography, it was not possible to be certain of the clinical diagnosis of coronary artery disease. This technique has enabled the identification of a population of symptomatic patients that has severe obstructive lesions of the coronary arteries and some asymptomatic patients. The entire spectrum of obstructive coronary artery disease is not detected, because certain types of patients are selected for study and various therapeutic measures are applied which may affect the complications of and the survival from the condition. Ideally, it would be desirable to have periodic, repetitive arteriography in an untreated group, but such a study is not in the best interest of the individual affected. Still it is helpful to

record the complications and survival of patients who have been identified by single catheterization. By clearly outlining the clinical, arteriographic, and ventriculographic findings, and dividing patients into well defined subgroups, it is possible to derive a considerable amount of useful information. This has been done for a large group of medically treated patients, who have had a minimum follow-up of 10 years.

One of the principal benefits of study of the natural history is the formation of a standard for comparative studies of patients who are subjected to some new medical or surgical treatment—the unnatural history. It is unlikely that present medical treatment improves prognosis appreciably. If one wished rapidly to prove that bypass surgery affects survival favorably in any group of patients, it is evident that one would select a subgroup or subgroups known to be susceptible to early death. In chronic coronary artery disease, severe lesions of the left main coronary artery or marked obstructions of the right anterior descending and circumflex arteries in severely symptomatic patients should be the two groups studied. It is obvious that operative mortality must be quite low if one wishes to make early prognostic distinctions. With improvement in survival demonstrated in these subgroups, extension to other subgroups is warranted.

A brief summary of a large amount of data relative to the postoperative course of patients who have had bypass surgery is contained in this issue. There is no doubt that effective treatment alleviates anginal pain and alters the prognosis of most subgroups. The basic cardiac defect persists after operation, and it is likely that most surgical patients will die eventually of progressive coronary artery disease. Survival curves of medically and surgically treated patients will meet at the zero line. The question is how long and by how much the survival curves are separated. Only long-term studies of both groups will provide the answer. When the etiology of coronary artery disease is understood more completely, specific prophylaxis or therapy may be possible. That day will not dawn soon and surgical treatment now serves a useful purpose in the symptomatic treatment of certain patients who have obstructive coronary artery disease. Improved prognosis is an added benefit for most patients.